



KENNEDY SPACE CENTER

GO

Robert D. Cabana  
Center Director

# Exploration



Photo Courtesy of Royal Geographical Society





# Pioneering

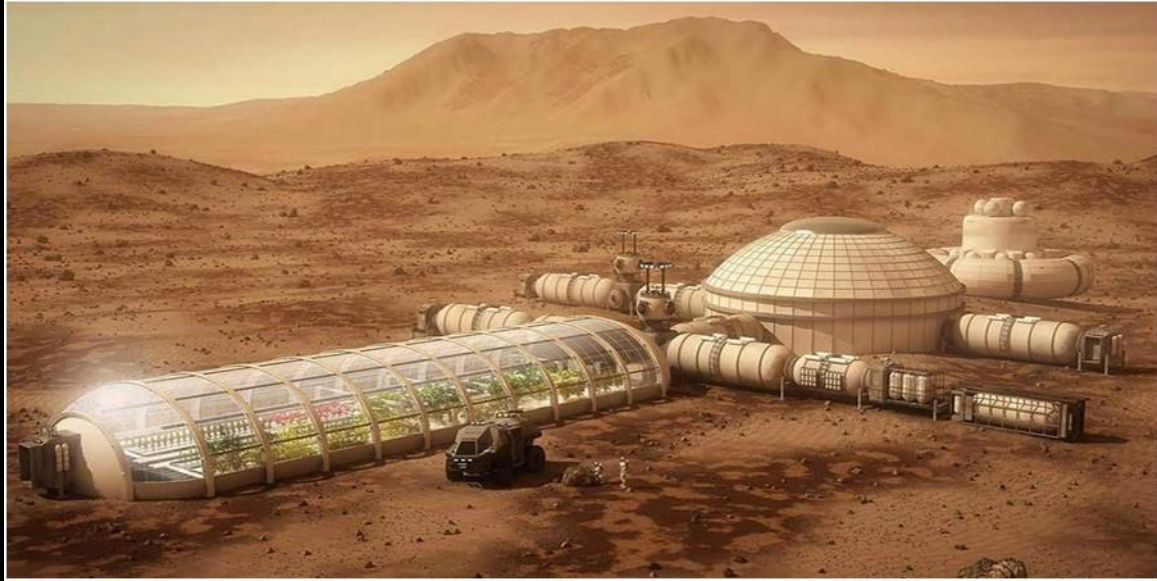
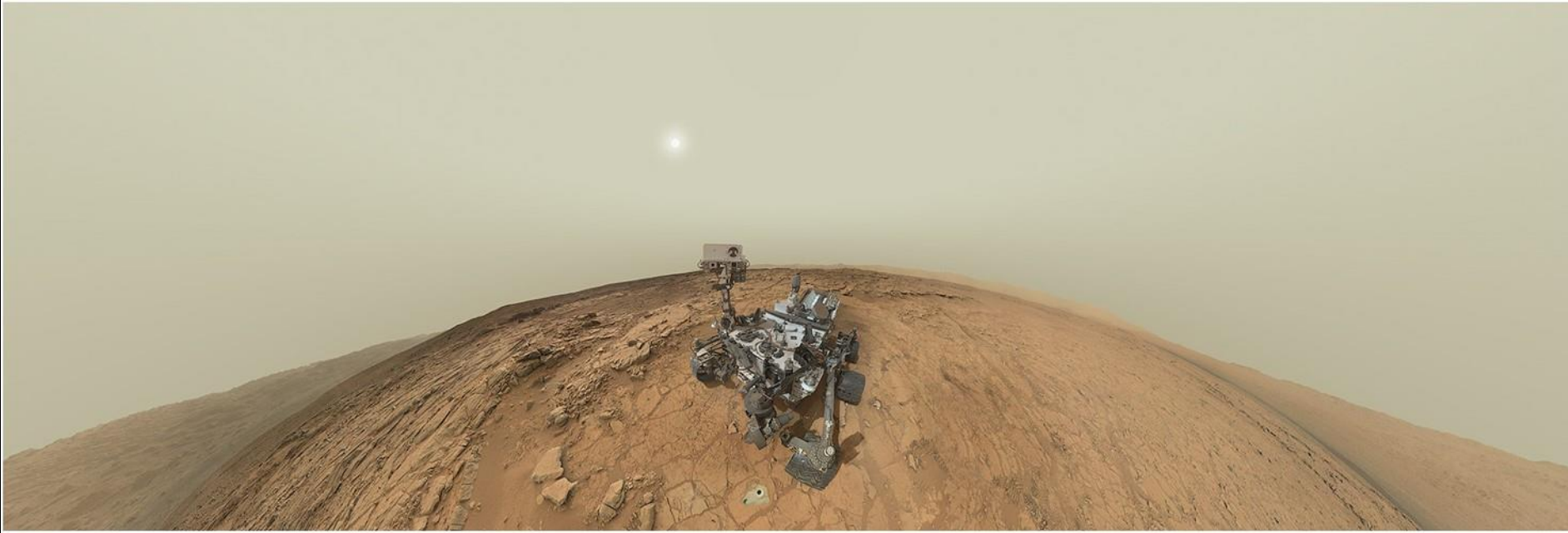


Photo Courtesy of Library of Congress





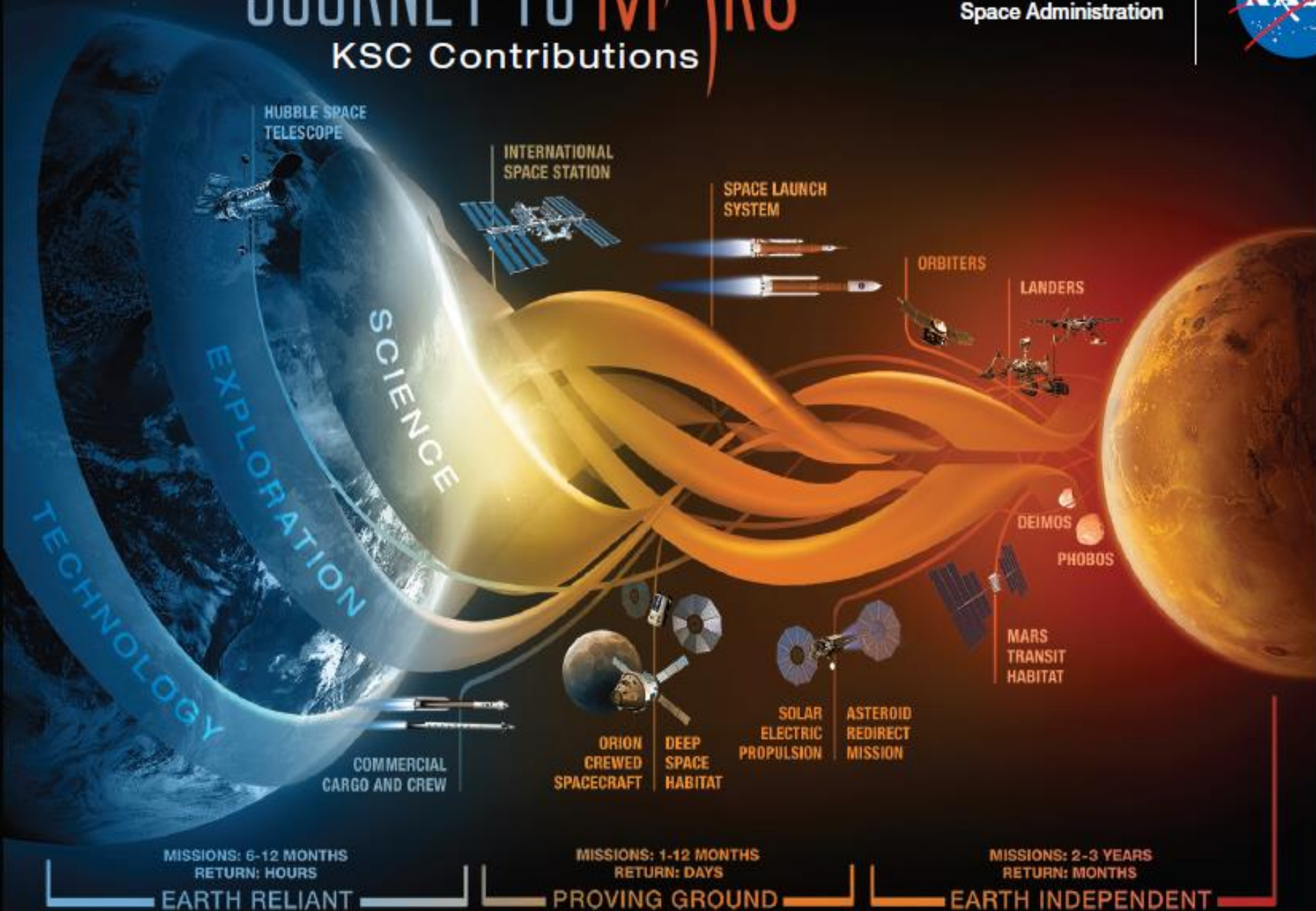
# Exploration & Pioneering of Mars



# JOURNEY TO MARS

## KSC Contributions

National Aeronautics and  
Space Administration





**EARTH  
RELIANT**

# JOURNEY TO MARS

KSC Contributions



HUBBLE SPACE  
TELESCOPE

INTERNATIONAL  
SPACE STATION

## ISS, LSP

- SPHERES Slosh Experiment
- ISS Research

## R&T

- Ground and Launch System Technologies

## ISS

- Payload Processing
- CRS Launches

## CCP

- Boeing
- SpaceX
- Blue Origin
- Sierra Nevada Corporation

COMMERCIAL  
CARGO AND CREW

MISSIONS: 6-12 MONTHS  
RETURN: HOURS

EARTH RELIANT

# Commercial Crew & Cargo



## Commercial Cargo



Orbital Cygnus



SpaceX Dragon

## Commercial Crew



Boeing CST-100 Starliner



SpaceX Crew Dragon



PROVING  
GROUND

# JOURNEY TO MARS

KSC Contributions



SPACE LAUNCH  
SYSTEM



## GSDO

- Mobile Launcher
- Vehicle Assembly Building
- Pad 39B
- Orion Processing

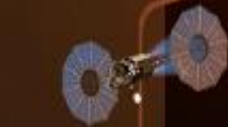
## R&T

- Space Life Sciences and Habitation Systems
- Robotics and Autonomous Systems



ORION  
CREWED  
SPACECRAFT

DEEP  
SPACE  
HABITAT



SOLAR  
ELECTRIC  
PROPULSION



ASTEROID  
REDIRECT  
MISSION

## GSDO, LSP

- ARM Launches

## CPD *(Safe Facility/Property Use)*

- Pad 39A - SpaceX
- C3PF - Space Florida/Boeing
- Ex Park - SPFL/Blue Origin
- SLF - SPFL
- VAB HB2, Pad 39C

MISSIONS: 1-12 MONTHS  
RETURN: DAYS

PROVING GROUND





EARTH  
INDEPENDENT

# JOURNEY TO MARS

KSC Contributions

## LSP

- MAVEN Launch
- InSight Launch
- Mars 2020 Launch

## R&T

- Surface Systems and In Situ Resource Utilization (ISRU)
- EXO-Sim, EMC (Evolvable Mars Campaign) Surface Operations Simulator

## LSP

- OSIRIS-REx Launch



# Space Launch System & Orion





# Mobile Launcher



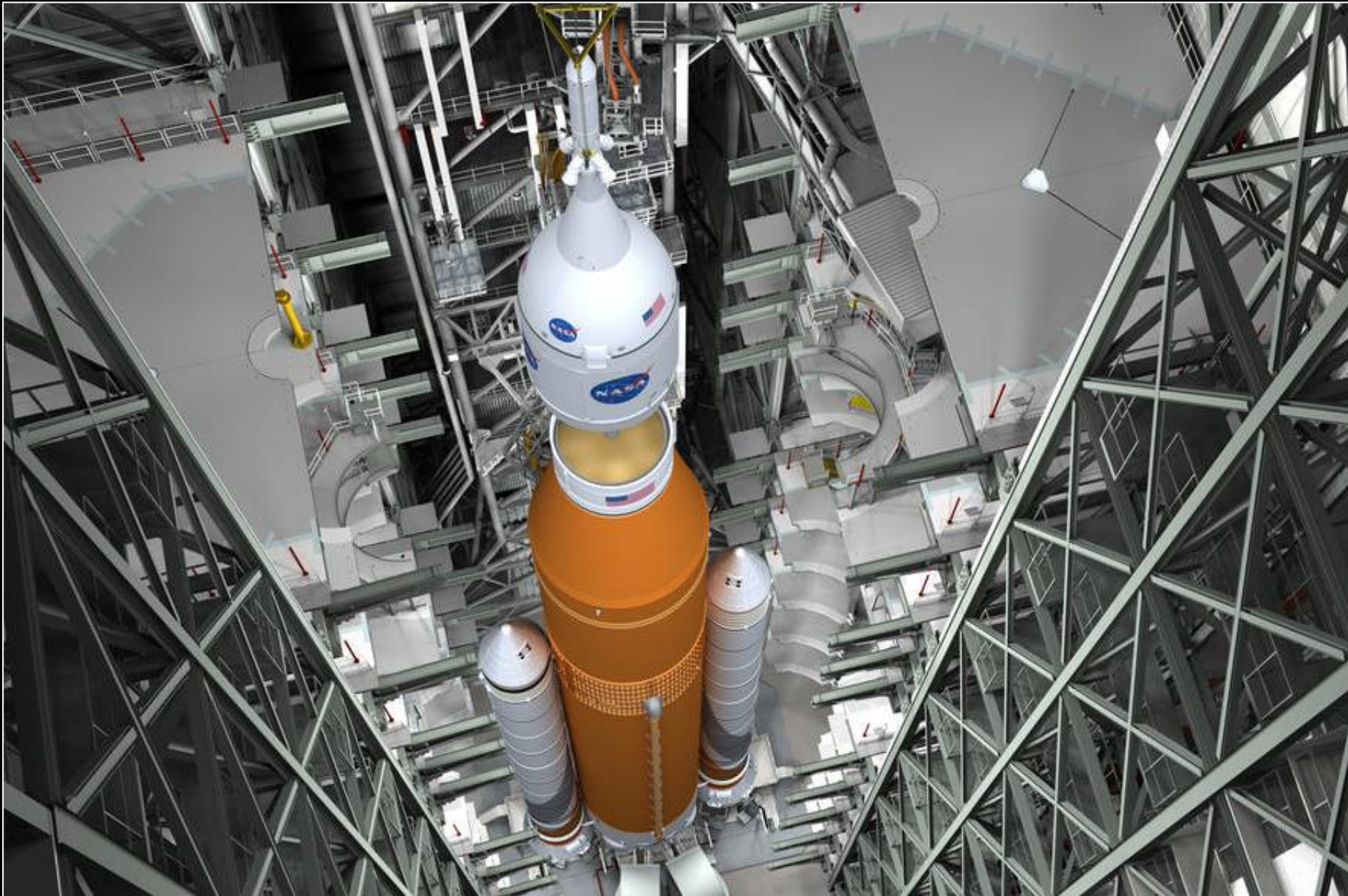


# Vehicle Assembly Building





# SLS in the VAB





# Inside the VAB





# VAB Platforms



# VAB Platforms





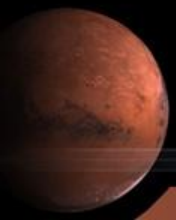
# KSC – A New Era



# The Transformation of KSC



- Past 4 years have seen tremendous change:
  - 43% reduction in workforce
  - 28% reduction in active facilities
  - 30% reduction in cost of technical capabilities
  - Developed a robust plan to execute KSC's vision





# Launch Pad 39A – Past





# Launch Pad 39A – Present





# Launch Pad 39B – Past





# Launch Pad 39B – Present





# Launch Complex 46B



# Orbiter Processing Facility 3 – Past





# Commercial Crew & Cargo Processing Facility



# Launch Control Center – Firing Room 4



Columbia



Challenger



Discovery



Atlantis



Endeavour

209 12 48 5  
0 40 56 00 00 00 00 00 00 00  
LOCAL TIME MINUTES REMAINING FIRST FLIGHT REMAINING PLACED IN HOLD HOLD TIME REMAINING



LANDING RECOVERY DIRECTOR

CHIEF NASA TEST DIRECTOR

ASST. NASA TEST DIRECTOR

NASA TEST DIRECTOR

ASST. ORBITER TEST CONDUCTOR

ORBITER

LAUNCH DIRECTOR

ASST. LAUNCH DIRECTOR



# O&C High Bay





# Launch Control Center – Firing Room 1





# Central Campus





# Exploration Park & the Space Life Sciences Lab





# Shuttle Landing Facility



- We are doing everything we can to make spaceflight more efficient and affordable
  - Enable & leverage commercial capabilities where they exist
  - Leverage government capabilities where commercial capabilities don't exist
- We have transformed into a multi-user spaceport, and are paving the way on NASA's journey to Mars!

